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L3: Entry 1 of 1 File: USPT Jan 27, 1998

DOCUMENT-IDENTIFIER: US 5712899 A
TITLE: Mobile location reporting apparatus and methods

Brief Summary Text (6):
The benefit of the tracking technology has provided base unit operators, for example, trucking companies, rental car fleet operators, and sales managers, with the ability to track the geographic location of their vehicles. Yet, such base unit operators have not been provided with sophisticated cartographic displays with an illuminated geographic locus of the mobile unit operator. In addition, the prior art does not provide base unit operators and mobile unit operators the present ability to be in audio communication while the mobile operator is transmitting the telephone signal to the base unit. In addition, the ability to quickly and easily reach a predetermined base operator during an emergency, or while one is lost, is not presently available.

Detailed Description Text (5):
In addition to the trend to use digital signals for land based cellular phones, the future trend in satellite communications is toward digital techniques as well. Frequency division multiplexing-frequency modulation-frequency division multiple access (FDM-FM-FDMA) has been the most popular analog technique used in commercial satellite systems because it has been field-proven and makes it easy to provide quality satellite links at a low cost. As the number of earth stations increases, the transponder capacity markedly in a FDM-FM- FDMA system. In addition, FDM-FM-FDMA is inflexible in responding to traffic changes. On the other hand, a digital satellite system such as quaternary phase shift keying-time division multiple access (QPSK-TDMA) can accommodate a large number of earth stations with only a small loss in transponder capacity. Furthermore, it can quickly respond to traffic variations. Also associated with digital satellite communications are techniques such as demand assignment and digital speech interpolation to further increase efficiency of telecommunications. Unlike an analog satellite system, a digital satellite system can employ error-correction coding to trade bandwidth for power. Finally, the use of code-division multiple access (CDMA) for low data rate applications enables users to employ micro earth stations (0.5-m antenna) at an extremely low cost ($3000)to obtain premium quality services. The flexibility of digital satellite system will make them even more promising when integrated digital networks become fully implemented.

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L21: Entry 21 of 21 File: USPT Apr 14, 1992

DOCUMENT-IDENTIFIER: US 5105069 A
TITLE: Self-service transaction apparatus and method

Brief Summary Text (4):
Self-service transaction (SST) apparatuses are now widely used to allow persons to perform numerous varied but specific transactions without interfacing with another person. Illustrative are automatic teller apparatuses which automatically perform different banking transactions such as cash withdrawals, transfers, deposits and the like. Other SST apparatuses may perform ticketing services for airlines, railroads or theatrical performances. Still others may automatically perform the transactions customarily attendant rental of an automobile from a car rental company, or a room from a lodging establishment, which transactions customarily would include customer identification, assignment of an automobile or room, distribution and subsequent receipt of keys, and preparation of bills, receipts and the like.

Brief Summary Text (6):
Each access port of an apparatus of the type described must have a security gate or the like associated therewith for preventing unauthorized access to the interior of the housing of the apparatus. Each article conveyor of the apparatus customarily must and does have one or more sensors associated therewith for detecting the presence or absence of the articles to be conveyed thereby. The large number of dedicated conveyors, security gates and sensors complicate the design and significantly increase the direct cost of the typical SST apparatus. Additionally, since each of these components is subject to possible failure, however well constructed, they increase the likelihood that the apparatus will experience malfunctions requiring its removal from operation pending servicing or repair. If restoration of the apparatus to operation is delayed, as for instance due to unavailability of a servicing engineer, the operating cost of the apparatus is increased, and customer dissatisfaction and complaints ensue. Customer dissatisfaction may also be generated by the three or four article access ports customarily upon the apparatus. Many persons who are accustomed to conducting all of their banking transactions through the single opening of a teller cage are so confused by the multiple ports of an SST apparatus that they are unable to successfully use the apparatus.

Brief Summary Text (9):
A more specific object is the provision in an apparatus of the type described of an article gripping and transporting robot that during a single transaction of the apparatus successively conveys articles of different types (i.e., of significantly differing kinds, shapes or sizes) between an access port of the apparatus and any desired one of a plurality of article receiving and/or supplying devices disposed at different locations within the housing of the apparatus.

Brief Summary Text (12):
Boothroyd U.S. Pat. Nos. 3,937,925, 3,970,992 and 4,696,426 disclose SST apparatuses for banking transactions. The apparatus of U.S. Pat. No. 3,937,925 includes a plurality of ports for permitting the passage of articles of diverse types into and/or out of the housing of the apparatus, and further includes a plurality of article conveyors for conducting respective ones of the articles between the ports and selected locations within the housing. The apparatus of U.S. Pat. No. 3,970,992 dispenses currency and a receipt through a common port. In the apparatus of U.S. Pat. No. 4,696,426, envelope deposits and individual check deposits are introduced into the apparatus through the same housing port, and are conducted by a bifurcated belt-type conveyor to desired locations within the housing of the apparatus.

Brief Summary Text (14):
Jones European Patent Application Publication No. 0191636 discloses a vending machine for effecting sales or rentals of video cassettes of equal size and shape. The apparatus includes a cassette transport device that transports the cassettes between a selected one of a plurality of storage compartments within the housing of the apparatus, and a location adjacent a cassette inlet/outlet opening of the housing. The cassette transport device can undergo translatory movement along any of three orthogonal axes.

Detailed Description Text (3):
At any suitable location within housing 12 there are a plurality of article handling devices for receiving, supplying and/or otherwise handling the aforesaid articles. Such devices include a card reader 26 (FIGS. 1, 13 and 14) for reading the customer identification or banking cards 18, a paper currency dispenser 28 (FIGS. 1, 4 and 11) for dispensing bills 20, a metallic currency dispenser 30 (FIGS. 1 and 12) for dispensing metallic coins 22, a printer 32 (FIGS. 1, 9 and 10) for printing receipts or similar statements 24 and, if desired, for also printing identification upon deposits 19; and a repository 34 (FIG. 1) for receiving and storing deposits 19 and possibly other articles, such as stolen or expired cards 18.

Detailed Description Text (6):
As is diagrammatically indicated in FIG. 15 of the drawings, the operation of apparatus 10 is controlled by a central processing unit (CPU) 84 that receives input data from a plurality of sources, and that transmits control outputs. The sources from which CPU 84 receives input customarily include a data bank containing customer identification and account status information; customer interface panel 13; sensors and/or monitoring devices associated with card reader 26, currency dispensers 28, 30, printer 32, repository 34; and an optical or other sensor 82 (FIG. 2) provided in association with gripper jaws 46 of robot 44 for the purpose of detecting proximity of the jaws to an article to be gripped thereby.

Detailed Description Text (8):
At the outset of a banking transaction between apparatus 10 and a user of the apparatus, robot 44 customarily would be positioned by CPU 84 at a location within housing 12 such that its then open jaws 46 receive the banking card 18 inserted by the user into the slot-like port 14 of housing 12 (FIG. 1). CPU 84 causes the jaws of 82 of robot 44 to grip card 18 when its presence between the jaws is detected by the sensor 82 associated therewith. CPU 84 then causes robot 44 to transport the card into and longitudinally of the card-receiving slot within the read head 42' of card reader 26. If the data read by card reader 26 and transmitted to CPU 84 indicates that card 18 was improperly oriented when inserted by the user into the port of access means 14, CPU 84 may command robot 44 to either return the card to the user, or to re-orient the card and then again move it longitudinally of the read head slot. If the card is identified as a lost, stolen or expired one, robot 44 may be commanded by CPU 84 to either return the card to the user, or to transport it to repository 34. Assuming, however, that the card is a valid one, CPU 84 commands robot 44 to leave the card within the rear end portion of the slot of read head 42', or at some other "temporary" location, pending completion of the banking transaction requested (via interface panel 13) by the user of apparatus 10. If the transaction is simply one in which the user of apparatus 10 desires information as to an account balance, or a transfer of funds between two different types of accounts, CPU 84 causes printer 32 to print a statement of such transaction, and simultaneously causes robot 44 to move from its position adjacent card reader 26 to a position adjacent printer 32. CPU 84 then causes robot 44 to remove the printed statement from printer 32 and transport it to and into the extendable and retractable drawer 88 associated with article access port 16, which drawer has slot-like openings 90 (best shown in FIG. 1) that permit articles to be conveniently inserted into and/or removed from it by robot 44. CPU 84 then further causes robot 44 to retrieve transaction card 18 from card reader 26, or its other "parked" location, to transport the card to and into drawer 88, and to then move the drawer forwardly to its FIG. 8 extended position wherein the articles contained therein can be removed by the user of apparatus 10. After a preselected period of time sufficient for the user of apparatus 10 to have removed the articles from drawer 88, CPU 84 causes robot 44 to return drawer 84 to its retracted position, thus completing the transaction.

Detailed Description Text (13):
FIGS. 16-18 show another embodiment wherein additional protective means is provided in association with access port 16 and transaction drawer 88 for the purpose of further shielding them from ambient weather conditions, vandalism and the like. The protective means includes a shroud member 104, and a tray member 106 with a bottom wall 108, a

front wall 110, and upwardly extending side walls 112, 112' having arcuate forward edges. Tray 106 is mounted upon and projects outwardly from enclosure 12 at a location such that it receives transaction drawer 88 when the drawer is moved from its retracted position (FIG. 16) to its extended position (FIG. 17). Shroud 104 includes an arcuate central section 114, opposite side sections 116, 116', and an elongate control rod 118 mounted upon the rear part of central section 114 for limited axial movement. The shroud side sections 116, 116' closely overlie the outer major surfaces of respective ones of tray side walls 112, 112', and shroud central section 114 closely overlies the arcuate forward edges of such walls. Suitable bearings and shafts connected to the lower ends of shroud side sections 116, 116' and to enclosure 12 mount shroud 104 for pivotal movement between extended and retracted positions. When shroud 104 occupies its extended position shown in FIG. 16, the shroud and tray 106 render transaction drawer 88 inaccessible to weather conditions and to persons. When shroud 104 occupies its retracted position and drawer 88 occupies its extended position, as shown in FIG. 17, the shroud still partially shields the drawer from ambient weather conditions but then permits access to the drawer by a person using apparatus 10. Shroud 104 may be temporarily locked in its extended position (FIGS. 17 and 18) by axial movement in the appropriate direction (to the left, as viewed in FIG. 18) of its control rod 118 into the then therewith aligned bore of a locking member 120 affixed in any suitable manner to the frame of enclosure 12. A similar locking member 120' (FIG. 16) permits shroud 104 to be temporarily locked in its FIG. 17 retracted position. Pivotal movement of shroud 104 between its extended and retracted positions, and axial movement of its control rod 118 into and out of locking members 120, 120', are produced by robot 44, which at appropriate times during the transaction is caused by CPU 84 (FIG. 15) to grip an enlarged central section of rod 18 and then sequentially move the rod in the directions necessary to produce the desired axial and/or transverse movements of the rod. During the final stages of a currency withdrawal transaction, for example, robot 44 might and likely would firstly advance the currency-containing drawer 88 from its FIG. 16 retracted position to its FIG. 17 extended position; then retract rod 118 from locking member 120; then move shroud 104 from its FIG. 16 extended position to its FIG. 17 retracted position; and then move rod 118 into the retracted position locking member 120'. After a period of time sufficient for a user of apparatus 10 to have removed the currency from drawer 88, robot 44 retracts rod 118 from locking member 120', pivots shroud 104 forwardly and, after the shroud reaches its FIG. 16 extended position, again inserts rod 118 into locking member 120. For greater safety of operation, the latter part of the pivotal movement of shroud 104 to its FIG. 16 extended position may be and preferably is accomplished by gravity and a passive fluid-operated closure device 122 (FIGS. 16 and 17), rather than by robot 44. Device 122 prevents overly abrupt and/or forceful final movement of shroud 104 which, if allowed to occur, might injure the user of apparatus 10.

CLAIMS:

1. A self-service apparatus for conducting banking transactions, comprising:

a housing having restricted access port means for permitting passage of articles into and from said housing;

a dispenser of currency within said housing;

a dispenser of printed statements within said housing;

a repository for deposits within said housing;

a multi-purpose robot having an article gripper movable in translation along orthogonal X, Y and Z axes to and between different locations within said housing, said article gripper transporting currency from said dispenser of currency to said port means, and transporting printed statements from said dispenser of printed statements to said port means, and transporting deposits from said port means to said repository;

said article gripper of said robot including a pair of cooperating gripper jaws, first frame means mounting said gripper jaws for movement toward and away from each other, first drive means upon said frame means for imparting said movement to said gripper jaws, second frame means mounting said first frame means for rotative movement about an axis generally parallel to said gripper jaws, drive means for imparting said movement to said second frame means, third frame means mounting said second frame means for rotative movement about a second axis perpendicular to said first-mentioned axis, drive means for imparting movement about said second axis to said second frame means, fourth frame means mounting said third frame means for substantially vertical translatory

movement, drive means carried by said fourth frame means for imparting said substantially vertical movement to said third frame means, fifth frame means mounting said fourth frame means for rotative movement about a substantially vertical axis, drive means for imparting said rotative movement about said substantially vertical axis to said fourth frame means, a base assembly mounting said fifth frame means for translatory movement along orthogonal substantially horizontal axes, drive means carried by said base assembly for imparting said movement to said fifth frame means.

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L13: Entry 22 of 22 File: USPT Mar 1, 1988

DOCUMENT-IDENTIFIER: US 4728922 A
TITLE: Vehicle monitoring system

Brief Summary Text (3):
At the present time, the only method known to the applicants for monitoring truck traffic along public highways is the use of publicly operated inspection stations provided with weigh scales and located at strategic locations along the highway. A number of problems have been encountered however with the operation of the present stations, perhaps the major one being that in peak traffic periods they are unable to handle the large volumes of commercial vehicles without lengthy delays. The delays are caused apparently by the length of time it requires to weigh these large commercial vehicles which can be quite long and the time required to manually log details concerning the vehicle such as its license class, manifest and violations committed. The problem might be overcome by providing greater facilities at these vehicle stations or by increasing the manpower but this could only be done at a considerable increase in costs to the public or to highway users, and governments are under increasing pressure to keep unnecessary costs down as much as possible.

Brief Summary Text (8):
U.S. Pat. No. 4,398,172 issued Aug. 9, 1983 to Eaton Corporation teaches a monitoring system designed for rental cars. A unit mounted in each vehicle includes circuitry for transmitting, on a continuous repetitive basis, information characterising the vehicle and unique thereto. A monitoring unit mountable at the monitoring location includes circuitry for receiving information transmitted by the vehicle unit. The unit in the vehicle can transmit information as to the mileage of the vehicle and as to fuel tank level, which information is required before the driver can leave the vehicle with the company.

Detailed Description Text (5):
The vehicle monitoring unit has means for receiving a radio transmission from a transmitter located in the vicinity of the vehicle 10. As already indicated, such a transmitter would in many cases be located at a weigh scale station 16 located along the highway. Alternatively it could be installed in a mobile station such as a truck operated by the transport authorities. The receiver 42 is tailored to be compatible with the user's and the transmitter's specifications. The preferred mode of transmission would either be VHF/FM or UHF/FM. The receiver would include the usual preamplifier. The receiving signal would also have a filter to remove noise from the received signal. In addition to having means for removing the local modulator signal, the receiver would have a second phase detector 44 set at a specified frequency for producing a carrier detect signal which is sent to a central processing unit 46 in order to indicate that an interrogation signal is active. The receipt of such a signal by the central processing unit is necessary in order for the central processing unit to transmit information being requested by the vehicle monitoring station. The unit is programmed to send such information over the air only when the required interrogation signal is being received. The receiving means can also have a limiter stage which provides a TTL (transistor-transistor logic) or a CMOS (complimentary metal-oxide silicon type integrated circuit) compatible signal level. The signal processing, carrier detect, and limiter-filter operations can be carried out by a single known unit sold under model number XR2103 by Exar Integrated Systems, Inc. of 750 Palomar Ave., Sunnyvale, Calif. 94086. As the use and construction of such a unit is known in the art, further detailed description of this component is deemed unnecessary for purposes of the present invention.

Detailed Description Text (7):

The central processing unit 46 preferably comprises a microcomputer capable of directing all of the functions of the vehicle monitoring unit in accordance with a firmware programme in an EPROM that is a principal component therein. The EPROM (erasable programmable memory) as is well known can be returned to its unprogrammed state if required by exposing the integrated circuit therein to ultraviolet light through a window provided in the device. The microcomputer can comprise that sold by Zilog, Inc. of 10340 Bubb Rd., Cupertino, Calif. 95014 under model number Z8603 but other microcomputers could also be used. The aforementioned Zilog microcomputer includes such features as one full duplex UART (universal asychronous receiver/transmitter), one RS-232C port, 2 parallel ports (one of which can be used as an input and the other of which can be used as either an input or an output), one external I/O bus (8 byte) and one "piggyback" 32K EPROM. As microcomputers of this type are well known and the detailed construction of the microcomputer itself does not form part of the present invention, further description of the microcomputer is deemed unnecessary. The microcomputer can perform data acquisition function, either by means of the aforementioned receiver 42 or by means of sensors to be described, and display output function such as by means of the aforementioned screen 36. To provide an output to the operator of the vehicle, the processing unit 46 is connected to an output interface/driver 59 which allows a standard alpha-numerical, C.R.T. or other visual display 36 to be utilized. Examples of interface drivers that can be used are those sold by Intersil Inc. of Cupertino, Calif. under Model No. ICM7733 (for alpha numerical display) or Model No. ICM7218 (for 7 segment display). If desired it can also interface with a host computer as indicated at 58 in FIG. 14. The microcomputer is also capable of detecting tampering and attempts at defeating the integrity of its information and of alerting the users of the system to such. The microcomputer is capable of doing this by detecting any break in the signals (even for a microsecond) from any of the sensors feeding essential information to it and also by detecting any break in the power supply or a high voltage condition such as a deliberate or unintentional burnout. If a break or condition of this nature is detected by the microcomputer, it is programmed to generate a default condition signal which is sent over the transmitter (to be described).

Detailed Description Text (8):
It will be understood that the microcomputer 46 can be interrogated by a master system such as the one located at the aforementioned weigh scale station 16 operated by the highway authorities. However interrogation can only take place if the necessary interrogation signal is sent by the transmitter at station 16. As indicated already whether or not the proper interrogation signal is being received is detected by the signal detector 44 which, upon receipt of this signal, will permit the microcomputer (after receipt of appropriate instructions) to transmit the compiled data therein to the monitoring station operated by the authorities for their information and possible use if this information is specifically requested. The microcomputer is capable of receiving instructions or updated information from the master system by way of the receiver 42. The updated information can be stored in the memory of the computer. In any event if the vehicle meets all legal requirements, either by way of the transmissions sent by it to the station 16 or by actually stopping at the station 16, the fact that the vehicle has been checked and approved by the station will normally be recorded in the memory of the computer by a suitable transmission from the vehicle monitoring station. It will also be stored in the large central computer operated by the transport authorities. In this way provided a change in the essential conditions of the vehicle is not detected or sensed, stops at any further monitoring stations encountered by the vehicle on its trip should be unnecessary. This will result in substantial savings of time and fuel, particularly for vehicles on long journeys.

Detailed Description Text (16):
In addition to having the capability of storing information that has been fed into the microcomputer 46 either by means of the keyboard 38 or by radio transmission picked up by receiver 42, the microcomputer can store important and necessary information fed to it through cables or wires 80 from various sensors located at various locations on the vehicle or truck 10. These sensors provide means for sensing or measuring physical parameters of the vehicle, including the weight thereof and converting the sensed, or measured parameters to electrical signals indicative thereof. In the case of weight sensors for a transport truck, FIG. 4 provides an illustration of the locations of the weight sensors 82 that can be used. The precise location of the weight sensor and the number required will depend upon the type of axle and spring assemblies used in the truck. FIG. 4 illustrates a typical truck and trailer combination having a total of five axles. The tandem axles at the back of the trailer and at the back of the tractor can be of the type shown in FIG. 5 wherein each axle is supported by its own leaf springs 86. The single front axle on the front of the tractor can be arranged in the

manner shown in FIG. 6 and is provided with means for steering the front wheels 88. The means for mounting the front wheels is shown in FIG. 6 wherein a set of leaf springs 90 resiliently connect the front axle to the frame 92 of the tractor. Although typical forms of axle supports are schematically shown in FIGS. 5 and 6, it will be understood that various other means can be and are used to support the body of a truck or commercial vehicle on its axles and the present invention is by no means limited to the type of axle and spring assemblies shown in these figures. It will be further understood that the leaf spring assemblies shown are connected directly or indirectly at their opposite ends to the adjoining frame of the vehicle by means of connecting brackets 94 to 98. The centre portion of the spring assemblies on the other hand are free to move upwardly or downwardly relative to the adjoining vehicle frame 91 or 92. The location of the centre portion of each leaf spring assembly relative to the adjoining frame will depend primarily on two factors, namely the total weight of the vehicle and its load being supported by the respective axle and the momentary road conditions being encountered as the vehicle travels along the highway. The first factor will remain relatively stable as the vehicle travels along the highway because its weight should not change. The second factor will or may change constantly, depending upon the road conditions but the effects of bumps or potholes on the position of the centre portion of the spring assembly will tend to be brief and insignificant from the standpoint of weight determination. The effect of road conditions on the momentary position of the axle and spring assembly relative to the adjacent frame can be eliminated by arranging the program to take a weight reading from the sensors only when the vehicle is stopped or parked as this is the only time when the weight of the vehicle could be significantly changed. Alternatively the program can reduce the effect of road conditions by taking several or multiple weight readings over a short time interval and by applying an algorithm to these readings compensating for transient road conditions. A preferred form of electrical sensor 82 for determining the weight on an axle is shown in detail in FIGS. 7 to 9. This sensor 82 is a Hall, effect/magnetic sensor having a cylindrical ferrous case or housing 100 typically made of steel. The bottom end of this case is closed while the top end is open but enclosed preferably by an expandable boot 102, preferably made of rubber or synthetic rubber. The bottom end of the boot is firmly connected to the top end of the case 100 by any suitable means such as a pipe clamp 101 that can be tightened. The upper end of the boot is also firmly secured by any suitable means to a flat steel plate 105 that is rigidly connected to the frame 91 or 92. For example a steel ring 103 attached to the boot can be welded to the plate 105 to support the upper end of the boot. It will be understood that in this manner the open end of the sensor is completely enclosed during use of the vehicle and therefore dirt, dust and other foreign materials are kept out of the interior of the sensor. The bottom end of the case 100 is provided with two outwardly extending flanges 104 for connecting the bottom end of the case to the centre portion of the spring assembly. The flanges 104 can be connected by any suitable means to the spring assemblies, for example by short, small stud bolts fitted into holes in the upper leaves or by welding one or more of the flanges to one of the U-bolts 106 that hold the leaf springs together and that connect the leaf springs to the axle.

Detailed Description Text (27):
Reference will now be made to FIG. 16 which illustrates the logic which can be used to operate the receiver 42 and the transmitter 70. It will be appreciated that the illustrated logic sequence is carried out by the computer programme stored in the central processing unit 46. In the standard operating mode of the unit which is the mode at the start in the logic diagram, the receiver 42 and detector 44 are listening for the required FM signal, that is a signal from a vehicle monitoring station and having the required interrogation code. If the signal does not have the necessary code, no carrier detect signal is sent to the processing unit 46, the programme will not progress further, and the receiver will continue to listen for a proper interrogation signal. If the signal does carry the required code, a carrier detect signal is sent by the detector 44 and the computer programme will cause an acknowledgement signal to be sent to the monitoring station together with a reply code capable of identifying the vehicle to the station. After this information has been transmitted, the programme will go back to the receiver 42 which will be turned on and will wait for further instructions from the monitoring station. It will be appreciated that there can be a number of receivers on different vehicles awaiting instructions in this manner. Each unit will normally be dealt with in sequence, usually dependent on the order of receipt of an acknowledgement/reply by the monitoring station. In the absence of such instructions after a predetermined period of time, the programme will return to START A. If instructions are received and identified as such by the central processing unit (usually this is done by vehicle registration number), the programme will then progress to a transmit stage wherein either standard data concerning the vehicle or the specific data concerning the vehicle that has been requested by the message sent by the

monitoring station is transmitted by the transmitter 70. After this data has been transmitted, the programme will again turn on the receiver and listen for further instructions sent by the monitoring station, which instructions would again be distinguishable by a vehicle identification number. If such a signal is received and further information is requested, the unit 46 will again send via the transmitter the necessary information. If no such signal is received after a predetermined period of time, the programme will proceed to the next stage. After the initial data has been sent or the subsequent data, the receiver may pick up a signal to enter the monitoring station so that the vehicle can be checked. Alternatively a signal may be sent by the monitoring station indicating that the vehicle is in a satisfactory condition and may proceed without stopping. If such a signal is received by the receiver 42, the central processing unit provides a signal to the driver or operator of the vehicle to advise him that he may proceed. As indicated already this signal may be conveyed to the operator by either a visual display or by an audio signal. Once the go ahead or green light signal has been received, the programme will proceed to the next stage wherein the signals being sent by the monitoring station are ignored by the unit until the signal reaches an effective zero level, that is it fades out. Once this has occurred the programme will return to the START A condition.

CLAIMS:

1. A vehicle monitoring system comprising: a vehicle monitoring station having a radio transmitter, a radio receiver, means for identifying a vehicle from a reply code transmitted to said receiver from said vehicle, means for requesting via said transmitter the transmission of stored data concerning said vehicle from said vehicle after receipt of said reply code and means for sending instructions to a driver of said vehicle via said transsmitter that said vehicle is either to stop at said station or not to stop and proceed past said station;

means for receiving a radio transmission from said transmitter located in the general vicinity of the vehicle at said vehicle monitoring station, said receiving means being adapted for installation in a vehicle and including carrier detect signal means for indicating the transmission of an interrogation signal from said transmitter and a phase detector for processing the the received radio transmission;

a central processing unit connected to said receiving means, adapted to receive and process information sent from said receiving means, capable of storing information received or produced by said unit, and producing said reply code upon receipt of said interrogation signal;

means for displaying or indicating to said driver information or instructions stored in or received by said central processing unit, including said instructions that said vehicle is either to stop or not stop and proceed;

means for sensing or measuring physical parameters of said vehicle, including the weight thereof, and converting the sensed or measured parameters to electrical signals indicative thereof;

means for conveying said electrical signals to said processing unit for storage or processing;

means for transmitting said reply code and subsequently said stored information concerning said vehicle by radio transmission from said processing unit to said vehicle monitoring station in the vicinity of said vehicle, said central processing unit permitting said transmission of the reply code only after receipt of said interrogation signal and permitting said subsequent transmision of said stored information only after receipt of a request for the transmission of same from said monitoring station; and

power supply means for said monitoring system.

15. A vehicle condition monitoring system according to claim 14 wherein said receiving means includes a carrier detect signal means for indicating the transmission from said remote transmitter of an interrogation signal and a phase detector for processing the received radio transmission and wherein said central processing unit permits said transmission of information only after receipt of said interrogation signal.

16. A vehicle condition monitoring system comprising:

means for sensing or measuring physical parameters of a vehicle including the weight

thereof and converting the sensed or measured parameters to electrical signals indicative thereof, said sensing or measuring means being adapted for mounting on said vehicle;

means for detecting wehther or not said vehicle is moving or stopped and producing an electrical signal indicative thereof;

a central processing unit adapted to receive, process and store information from said sensing or measuring means and from said detecting means, said unit being mountable in said vehicle, said unit including means for storing information on the measured weight of the vehicle when it was last stopped; means for conveying all of the aforementioned electrical signals to said processing unit;

means for visually displaying information stored in or received by said central processing unit to an operator of said vehicle;

means for receiving a radio transmission from a remote transmitter located in the vicinity of the vehicle, said receiving means being operatively connected to said central processing unit;

means for transmitting information concerning said vehicle, including the weight thereof when the vehicle was last stopped, by radio transmission from said processing unit to a remote monitoring station in the general vicinity of said vehicle; and

power supply means for said monitoring system.

17. A vehicle condition monitoring system according to claim 16 wherein said receiving means has carrier detect signal means for indicating the transmission of an interrogation signal from said remote transmitter and a phase detector for processing the received radio transmission;

and wherein said central processing unit permits said transmission of information only after receipt of said carrier detect signal.

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L10: Entry 4 of 71 File: USPT May 14, 2002

DOCUMENT-IDENTIFIER: US 6386451 B1
TITLE: Travel system and methods utilizing multi-application passport cards

Brief Summary Text (9):
The lower administrative costs are the result of less personnel needed for the automated issuance and maintenance of computerized passenger cards as compared to controlling and following-up on paper-based documents or printed media; of less resources and telecommunications costs required to collect and clear electronic payments as compared to cash, checks or plastic-based payments; and of reduced fraud facilitated via the card-based security features. For instance, the detection of and prevention against fraudulent use of unauthorized travel means will be automated, and the steps of verifying passengers and use rights will be consolidated.

Detailed Description Text (17):
FIG. 2 illustrates the Travel Center (2) that provides the computerized means for the selection, payment and issuance of passenger cards; as well as for the storage in the cards of appropriate service entitlements and use rights. The center also provides the means to edit the contents of the passenger card, so as to represent a particular card configuration type. Such a center can be, for example, a ticket vending machine that is installed at an airport, a railroad station, or at a travel agency; as well as represent a provider of virtual services that are delivered via remote ticket offices, electronic shopping malls, or on-line travel support functions. Also shown is a Passenger Station (31) that controls access to the transportation carriers, as well as monitors possible connections relating to a particular travel itinerary including alternative transportation means. Further depicted are the plurality of service entities that provide the transportation carriers and render various services, as well as facilitate the support functions needed for the delivery of the appropriate goods and services. The Travel/Transport Provider (32) represents the entities that provide the transport means as well as the services associated therewith. Means for transportation may include airplanes, railroads, ships, automobiles, subways, buses, or rental cars. The services may comprise travel arrangements, such as reservations or cancellations and electronic ticketing or payments; transportation support, such as traffic management and capacity planning; and card-based marketing or sales promotions, such as loyalty and frequent traveling programs or other value-added benefits delivery schemes. The Bank/Financial Institution (33) represents the financial entity that facilitates the electronic payment process between the passenger and transport or other service providers, including the clearing/settlement of the electronic money exchanged via the communication link (1234). The Network/Transaction Processor (34) provides the infrastructure and services required for the processing of payments and transfer of electronic funds, including for the clearing and settlement of electronic transactions and related information. The Electronic Passenger Card (11) is the portable card used by the passenger to reserve a ticket or to purchase goods and services.

Detailed Description Text (25):
The PASSENGER STATION monitors and controls access to a particular transportation carrier, as well as to connecting carriers used throughout different travel segments of a particular itinerary. The station manages the passenger flow to or from the transportation carriers while verifying the card-based ticket, including related information stored in the passenger card, via the access control modules (111) and (112). These module can be installed at the entrance or exit gates at the premises where passengers can board a transportation carrier (e.g. at railroad stations or airport facilities) or where transportation vehicles can have access to (e.g. at toll bridges or cargo ships). The modules can also be placed on the transportation carrier per se (e.g. on a bus or any other public transportation vehicle). Upon coupling the passenger card to the control module, the modules monitor the admission to or departure from the premises--or access to or exit from the carrier--while reading the card-based

ticket information and other related card data. In this way, the modules can, for example, verify the passenger's identity or compute the number of passengers boarding the carrier, so as to compare the passengers being admitted against the list of authorized passengers or the carrier's maximum capacity. The modules can also compile the total number of passengers being admitted/transported over a predetermined time period, including by a particular transportation carrier. Such demographics information, together with other passenger or travel related data, can be gathered and forwarded to the transport provider for marketing/promotional programs. The modules can further compile the availability of open seats, if reservations are required or the carrier's capacity is monitored, as well as match the ticket holders with their luggage items. In the latter context, the passenger's luggage will be identified at check-in time; for instance, with a tag using a bar code means. The tag-related information will also be included into the card-based ticket, so as to allow the cross-reference between passengers, who have boarded onto the carrier, and the luggage items, which have been loaded into the cargo hold of that carrier. As an outcome of this comparison, the module can flag that all luggage is accounted for and could be correlated to a particular passenger, or that some items have no owner and therefore should be removed because no matching passenger could be established. The module can also convey a message if a luggage item was checked-in but not loaded yet onto the carrier; for example, the control module can detect the missing item when verifying the card-based ticket at boarding time and alert the carrier-personnel accordingly. The modules can also scan ID (Identification) documents for the purpose of retrieving and evaluating selected information recorded onto such documents. For example, the DOB (Date Of Birth) data or the cardholder's picture can be captured from a valid driver's license to determine the age or physical appearance of the passenger presenting the license. Also captured can be the information from a passport, such as the passenger's place of birth and citizenship, or data from other paper/plastic-based documents. Such information/data can be verified, including compared against Government databases, so as to authenticate the background of the passenger or provide the data required for other travel-related purposes.

Detailed Description Text (44):
The CONFIRMATION field allows the transportation provider, or any other service provider, to confirm a particular reservation made, or to certify a specific service requested, via the passenger card. For example, a passenger purchasing an airplane ticket and reserving a car rental or a hotel room, can download the electronic ticket and reservation information with the corresponding confirmation numbers provided by the airline, rental agency or hotel. To further safeguard this confirmation process, the passenger's digital signature, which is stored in the card, can be exchanged automatically with the carrier/service provider's certificates, which are stored in the remote provider databases. Based upon this, the certificate allows each party in a transaction to confirm the identity of the other and serve as proof as to who requested a particular service, who committed to provide that service, and who forwarded the confirmation number. The exchanged certificates can, for example, be compared against a list of original certificates stored in a public database, and if there is a match, the identity of the parties is considered as being authenticated, including the confirmation numbers as being issued by the service providers. In the case the pair of certificates doesn't match, a message will be conveyed that no positive identity could be established. If scrambled with a particular key, the certificate can be unscrambled only with the matching key, including information that is unique to the certifying party. Being able to unscramble the certificate is not only proof that the party's identity is established, but also that any information endorsed with the certificate is authentic as well. The Instruction-Window provides additional details or instructions about how to compile or select and how to use the card's communications and security features.

Detailed Description Text (86):
Let's start with a cardholder who is using the passenger card to plan and to implement a particular trip including the related travel applications. To aid the planning and implementation process, the cardholder will store in the passenger card a set of supporting data and information. This can be accomplished by coupling the card to a card station and by communicating with remote databases, so as to personalize the card contents for the corresponding applications. For instance, the cardholder can input into the card a set of personal data, such as name, mailing address, telephone number. Also stored in the card can be the card templates that are an electronic representation of the documents pertaining to the cardholder, such as the driver's license, car registration slip, insurance papers, and passport. These documents can be requested from the appropriate authorities, such as DMV office, insurance company and passport agency, and certified and downloaded into the card after proper identification is

provided by the cardholder. For example, the cardholder provides proof of automobile insurance and adequate payment to the local DMV office, which in exchange, issues the registration slip for that automobile. This can be achieved by coupling the passenger card to the DMV's database; communicating the card-based insurance information, including the demographics information of the automobile owner's; uploading the adequate payment data, including deducting the payment from the card-based monetary value; verifying the communicated information and uploaded data, including the identity of the cardholder and authenticity of the electronic payment; and certifying and downloading the car registration slip by the DMV, including storing it into the passenger card. Further stored in the card can be electronic payment forms including a monetary value. The cardholder will communicate, for example, with the bank and download into the card the electronic representation of a banking credit card, as well as an amount of electronic money from a checking account. The card-based credit card form and digital cash will be certified and downloaded by the bank upon request when proper identification is provided by the cardholder. The cardholder requesting the storage of documents or payment forms in the passenger card can be verified via several means. For example, by providing a particular biometrics information, or any other unique information, that matches or correlates to the one on record at those authorities. The identity can also be established by scanning an official ID document and comparing the scanned information against information stored in a remote database or loaded into the passenger card by a certified entity. The provided/scanned information can be verified via computerized means and/or by a human operator. After the card contents is compiled, the cardholder can choose the exterior "looks" of the passenger card; for example, imprint a particular graphics and text onto the package. The passenger card is now ready for further use. For instance, the cardholder presents or remotely couples the passenger card to a travel center-like setting to explore alternative transportation means and other services needed during the planned itinerary, to make and pay for the appropriate selections, and to load the ticket reservations and related information into the card. The planned trip requires an airline ticket, a hotel reservation, and a rental car. The cardholder will commence a dialogue with the travel center's database while retrieving and displaying the travel map.

Detailed Description Text (88):
To select the hotel and rental car reservations, the cardholder can choose from among a list of options provided via the travel map, or input any other selection via the graphical user interface. The cardholder makes a particular entry and commits to the payment requirement associated therewith; for example, via the card-based credit card template. In response to the entry made, the selected hotel or car agency will confirm the appropriate reservation; by downloading the corresponding confirmation number into the passenger card. Also downloaded can be additional information, such as a map with directions about how to get there or other services provided by the hotel/rental car agency. In the case of frequent mileage points to be earned, the appropriate points will be computed for the hotel room or car used by the cardholder. These points can also be stored in the passenger card, but need to be confirmed upon check-out from the hotel or return of the rental car. Also stored in the card will be the appropriate application codes and other data about the hotel accommodations and the rental car arrangements. The cardholder is now set to commence the trip.

Detailed Description Text (94):
Upon arrival at the destination, the passenger proceeds to the baggage claim to pick-up the luggage items that have been previously checked-in. The passenger removes the luggage, as identified by the tag affixed to the luggage, from the conveyer belt and proceeds to the exit gate while coupling the passenger card to the control module installed at that gate. To establish proper ownership of the luggage, the control module will read the tag-based data and compares the data with the tag-related information that was stored in the passenger card during the check-in process. If there is a match, the passenger can exit with the identified luggage items and the control module will update the airliner's database accordingly. In this way, the database will also establish proof that the airliner did not loose any luggage and that the passenger actually removed the luggage. If there is a discrepancy, a message will be conveyed that the passenger card does not contain tagging information that matches the tag on the luggage. An alarm may sound and/or the exit gate may block passage of individuals trying to remove luggage items not belonging to them. To further validate the ownership of luggage items, additional verification steps might be necessary. For instance, if the control module detects a biometrics information being associated with the tag-related data or information, the passenger must provide the matching "life" biometrics to establish proper ownership. If the provided biometrics does not match the biometrics information previously stored in the passenger card and/or attached to the

tag, the control module will convey an appropriate warning message.

Detailed Description Text (96):
The passenger removes the luggage item(s) from the carousel, exits from the baggage claim, and proceeds to the rental car agency to pick-up the car that was reserved via the passenger card. The agency representative couples the card, for example, via a card terminal or wireless means, to the database of the rental car provider's system, so as to verify the cardholder's eligibility and the car's availability. The system/representative will verify the confirmation number stored in the passenger card and compare it with the confirmation information stored in the rental car database. If there is a match, the system will retrieve and compile the contractual document that allows the passenger to drive a particular rental car. This can be achieved by automatically inputting into the document the appropriate data and information from the database or the passenger card; for example, the make/model and license number of the rental car, or the passenger's personal data and the information relating to the driver's license. Also retrieved from the passenger card can be the credit card account number for the purpose of waiving certain insurance clauses. If applicable, the card-based driver's license can be verified as well; for example, by displaying onto a computer screen the electronic picture associated therewith, or by communicating the license number to the DMV database for further verification. If the picture matches the physical appearance of the cardholder, or the card-based data correlates to the DMV database information, the driver's license is established as being authentic. The driver's license can also be authenticated via the DMV's digital signature, if such a signature is attached to the license. Also inputted into the contract-template can be additional terms and conditions, such as the number of days or miles the car can be driven for, as well as the drop-off location for the rental car. The passenger can now sign, for example, via a signature pad, the contract; the contractual document can be stored in the passenger card and/or printed out as a hardcopy. Also loaded into the passenger card can be an electronic key for the car identified via the license number stored in the contract, a layout of the lot the rental car is parked at, or a street map of the surroundings. The card-based key can be used, for example, to open the door or to start the ignition of the rental car at the date specified in the contract. This can be accomplished by installing or coupling a control module to the door lock or ignition system. The control module reads the card-based key and contract, and compares the license number and date included therein with the license number of the car provided by the control module and the date provided by the system clock. If there is a match, or date compliance, the door can be opened or the car be started. The passenger can also display onto the card the parking lot to pinpoint the car's location in response to inputting the car's license number, or the street map to communicate with the car and/or a provider of GPS (Global Positioning System) services when driving on the freeway.

Detailed Description Text (97):
The passenger leaves the rental car premises and heads towards the hotel while inputting into the GPS system the destination and request for positioning. As a response thereto, the GPS determines and lays out onto the street map the positioning coordinates of the car and possible routes leading to that destination. The GPS capability can also compile a dynamic track, including velocity and time, of the car as it moves on the freeway. This mobile track can be displayed onto the passenger card or a display mounted within the car, while illustrating any deviation from the directions that are recommended by the card-based street map. Upon arrival at the hotel, the passenger presents the passenger card to the registration desk. The card will be coupled to the hotel's database and a verification process, similar to the one performed at the rental car place, will be accomplished. For instance, the card-based confirmation number verified against the number stored in the database, card-based data and other information automatically retrieved and inputted into a registration slip, the stay at the hotel backed-up by the credit card form stored in the passenger card and by the digital signature provided by the cardholder, and appropriate data loaded into the passenger card or provided as a hardcopy. As a result, the hotel accommodation will be validated and stored in the passenger card as the appropriate room number and applicable time period. In this way, the passenger card can be used as an electronic key to gain access to that hotel room. This can be accomplished by installing at the entrance to the hotel room a control module that reads the card-based access key. The control module verifies the card-based room number and date(s) associated therewith. If the number and date match the room number and the date provided by the control module and the system clock, the door can be opened; otherwise, a warning message will be conveyed that the room number is wrong and/or accommodation is expired and no access can be granted.

Detailed Description Text (98):
After settling in to the room, the passenger decides to do some sight-seeing while driving to a national park located nearby. On the highway, the passenger will be stopped by a traffic officer for a speeding violation. The officer states the reason for stopping the car and requests to see some documents, such as the driver's license, registration slip/rental contract, and proof of insurance. The driver presents the passenger card, which contains those documents, and to view or verify this card data, the data can be retrieved and displayed, as well as communicated and compared against information stored in a remote database. The traffic officer can verify the displayed information or upload it for comparison with a remote database, and proceed accordingly. For example, the driver's license or other documents can be displayed within a card-based template(s) and viewed by the traffic officer. In this way, the displayed picture of the driver can be verified against the physical appearance of the cardholder, as well as the text of the rental agreement or insurance document read by the officer. The card can also be coupled to the officer's laptop, or to any other remote system database, for further verification purposes. For example, the officer can cross-check the contents of the documents with the database(s) of the DMV office, rental agency, or insurance provider. In this way, the driver's license number can be checked against a list of valid license numbers maintained by the DMV, the rental agreement can be compared against a list of contracts maintained by the rental agency, and the policy number plus expiration date and related coverage information can be verified against a list of policy holders maintained by the automobile insurer. If there are some problems with the documents, appropriate actions will be taken; for example, if the driver's license is expired or suspended, the officer will cancel the card-based driver's license and issue a ticket for driving without a valid license, as well as communicate the implemented measures to the DMV database. If the card-based documents are in order, the officer will compile the speeding ticket. This can be done by selecting the related ticket template from among a list of predefined templates stored in the laptop/system database and displaying the template onto the laptop. The ticket can be filled-out, for example, by automatically retrieving from the passenger card, and electronically inputting into the template, information that relates to the driver and rental car. The officer can also input additional information, such as the badge ID number, date of required court appearance, or any other data about the circumstances relating to the traffic violation. The driver will now sign the ticket; for example, via a signature pad coupled to the laptop. The ticket, including ticket number, can be stored in the passenger card or printed-out as a hardcopy. The ticket information will also be communicated with the database(s) of the DMV and county clerk's office for further processing and follow-up purposes. For instance, if the passenger card will be coupled later on to the clerk's database to pay the speeding fine, the database will retrieve the card-based ticket number and look-up the data record referenced by the ticket number. Based upon that record, the database will determine the payment due or any other terms, such as the date of a court appearance, that relate to the speeding ticket. Once adequate payment is provided, for example, via the card-based monetary value, the clerk's database will inform all appropriate entities, such as the DMV office or insurance agencies, about the status of that particular case. In addition, the clerk's database will also be updated to consider the case closed and to load an electronic confirmation thereabout into the passenger card. The passenger proceeds to the national park and upon arrival, couples the passenger card to the control module installed at the entrance to the park. The module will read the card-based data or scan the car to determine the type of car and number of passengers in the car. Based upon the findings, the module will determine the entrance fee; for example, a fixed fee per passenger car plus an incremental fee per each passenger. A park ranger can also instruct the module to download the map and view points of the park into the passenger card; such information can be displayed later onto a card template and used by the park-visitor for orientation purposes. The passenger uses the card-based monetary value to pay for the admission fee and enters the park.

Detailed Description Text (99):
The next day, the passenger decides to visit one of the surrounding cities and to use the public transportation means available throughout the city. The passenger stops at the city's information center and couples the card to a travel map to compile a particular trip. For instance, the passenger points and clicks onto the departure and destination locations, which are displayed on the map, enters the number of tickets requested, and selects the date/time the tickets should be valid for. In response thereto, the map determines the transportation carriers required for the trip, including necessary connections, and computes the price of the round-trip ticket. The passenger confirms the trip compiled by the map, or explores alternative routes, and pays for the ticket(s). Upon adequate payment being received, the map will store the

electronic ticket, including the use rights for the carriers and connecting travel segments, into the passenger card. Also downloaded into the passenger card can be the street map of the city, including points of interest or a restaurant guide. The passenger card is now ready to be used accordingly; for instance, on a bus, street car and a ferry, as well as for all-day rides on the subway. To board the transportation carriers, the passenger will couple the card to the control module(s) of the passenger station-like fixture that monitors access to and exit from the carriers. For example, to board the bus, the control module (at the entrance door) reads the card-based ticket, and in response thereto, compiles and stores the related admission stamp in the passenger card, and grants access to the bus; the ticket portion for the bus ride will be cancelled. When leaving the bus to continue the trip via the street car, the control module (at the exit door) will read the card-based ticket and bus-admission stamp, and in response thereto, compile and store a related exit stamp into the passenger card. To board the street car, the control module (at the entrance door) will read the card-based data, compile and load into the passenger card an admission stamp for the use of the street car; the admission stamp for the bus will be cancelled. To continue on the ferry boat, the previous methodology of using the passenger card for connecting carriers will be repeated. On the other hand, to facilitate the multiple rides on the subway, the control module will compile and store a master-admission stamp in the passenger card. This stamp can be valid for a predefined section of the subway network, as well as for a predetermined time period. When transferring from one subway vehicle to another, the control module at the corresponding entrance gates will read the master-admission stamp and automatically compile and store the related slave-admission stamps in the passenger card. These latter stamps allow access to the connecting vehicles as identified by the master-stamp, including for the time period as specified by the cardbased ticket. After the one-day tour is over, the passenger decides to spent the next few days to visit more points of interest located throughout the city. To plan those additional trips, the passenger will input into the card the places to be visited, as well as the related dates and times. The planning process can be accomplished by retrieving and displaying the card-based street map, selecting on the map the points of interest, as well as by compiling and inputting into the card the schedule concerning those future trips. The schedule will comprise the name and location of those places, as well as the time-stamps associated with the planned trips. In this way, the card-based schedule provides the guiding support and time management functions for the trips to come. For example, the card will indicate the positioning coordinates of the passenger and of the places to be visited while also flagging the location "next-in-line" or any deviations from the planned itinerary. The card-based schedule will also display, or convey to the cardholder, the date/time of the upcoming point of visit while also reminding the passenger about how much time is needed to get there. For example, the system determines the distance between the passenger's positioning coordinates and those of the place to be visited next, and in response thereto, computes the time needed to get there as a function of the transportation means available to the passenger. This required time will be compared against the actual amount of time available to the cardholder for reaching the scheduled destination; the available time will be calculated by subtracting the card/system clock from the timing data stored in the card-based schedule. Based upon this comparison, the card/system will advice the passenger about when to leave the present location, how fast to drive, or what other transportation carrier would be most appropriate to take, to reach the destination in time.

Detailed Description Text (100):
As departure time arrives, the passenger will check-out from the hotel, return the rental car, and board the plane. The bills for the hotel/car can also be paid via the passenger card. For instance, by coupling the card to the hotel's database to retrieve the bill as identified via the card-based room number. The electronic bill will be downloaded into and displayed onto a card-based template while showing the itemized charges and date(s) of occurrence. After forwarding the appropriate payment, for example, by deducting the amount due from the card-based monetary value, the hotel will compile and load an electronic receipt into the passenger card. In addition, the card-based key will be erased to prevent further access to any of the hotel's room. When dropping-off the rental car, the card will be coupled to the rental car agency's database to compile the bill as related to the card-based contract number, including the driver's name. The amount due by the passenger is a function of the contractual agreement and of the actual car utilization (e.g., number of days, mileage driven, or amount of gas left in the tank). The electronic bill will be downloaded into and displayed onto a card-based template while showing the amount and date of expenses incurred. After adequate payment is provided, an electronic receipt will be loaded into the passenger card, as well as the card-based key, which was used to open the car's door or to start the ignition, deleted. If enrolled into a frequent travel program, the

passenger card will be credited with the corresponding bonus points in exchange for staying at the hotel and driving the rental car.

Detailed Description Text (102):
After landing at the international airport, the passenger proceeds to the immigration/customs booths for clearance. The passenger card will be coupled to the control module monitoring passage through those booths and in response thereto, the control module will verify the passport and customs form that are stored in the card. For example, the module will retrieve and display the passenger's citizenship information and picture; this information can be analyzed, including compared against the physical appearance of the passenger. The module can also cross-check the passport data against Government databases, so as to detect any outstanding warrants, individuals convicted or suspected of criminal activities, cardholders who match the profile of possible drug traffickers, or any passenger that should be investigated before admittance is allowed. In the case a passenger is suspected of wrong doings and an appropriate court order is issued, the control module can sound a silent alarm or load an electronic tracer into the passenger card. This tracer can be pinpointed and intercepted by law enforcement agents that are in charge of surveillance for that particular passenger. Similar to the passport-related data, the information stored in the customs form can be verified as well. For example, the control module can retrieve and display the form onto the card template and allow the customs agent to evaluate the inputted data. The agent can also communicate with remote databases to determine if the form-based information justifies any follow-up or further investigation. For example, passengers with a history of trying to smuggle foreign agricultural items or import animals on the endangered species list, might be scrutinized more closely to see if any laws are violated or quarantine measures are applicable. After the immigration/custom checks are accomplished, an appropriate "approval" stamp can be stored in the card while clearing the passenger for passage.

TRIP TIPS // HERE . . . THERE . . . EVERYWHERE

Austin American Statesman; Austin, Tex.; Nov 27, 1994;

*Sic:***532111***Sic:***533110***Duns:00-697-7326**

Sub Title: [FINAL Edition]

Column Name: TRIP TIPS // HERE . . . THERE . . . EVERYWHERE

Start Page: J2

Companies: Avis Inc*Duns:***00-697-7326***Sic:***532111***Sic:***533110**

Abstract:

NO AIR FARES: The company that provides information about the lowest air fares from Austin took a Thanksgiving holiday break, so we are unable to print those fares today. However, the American-Statesman's Inside Line can send you a free fax of the lowest fares available as of Wednesday. Dial 416-5700 and punch in 7813. Inside Line provides a free fax service with low air fares and other travel information every day. VIA COMPUTER: Travelers with computers have some more new materials at their fingertips. Information on New Mexico's 12 ski areas, with everything from percentage of expert runs to lift prices, is available from the state's Department of Tourism on the Internet's World Wide Web: http:/www.nets.com/tourism.

Full Text:

NO AIR FARES: The company that provides information about the lowest air fares from Austin took a Thanksgiving holiday break, so we are unable to print those fares today. However, the American-Statesman's Inside Line can send you a free fax of the lowest fares available as of Wednesday. Dial 416-5700 and punch in 7813. Inside Line provides a free fax service with low air fares and other travel information every day. VIA COMPUTER: Travelers with computers have some more new materials at their fingertips. Information on New Mexico's 12 ski areas, with everything from percentage of expert runs to lift prices, is available from the state's Department of Tourism on the Internet's World Wide Web: http:/www.nets.com/tourism. You can get tourist and business info about Mexico and ask questions, post messages, search discount airline fares and download info from the government's tourism office by dialing the Mexico Online bulletin board: (407) 582-7801. Profiles on national and state parks and listings of outdoor events worldwide will be available on Outdoor Adventure Online Nov. 21 to ©America Online subscribers. CAR WARS: Following in the tire **tracks** of ©Avis, ©Hertz has announced that it's installing computer navigational systems in more cars and in more **locations** than ©Avis: California, Florida, Atlanta, Boston, Chicago, Detroit, New York and Washington, D.C. ©Avis, meanwhile, has started a Return Valet service where an employee will drive customers dropping off cars to their airline terminals at 35 airports for a fee, from $4 to $12, so they won't have to wait for a bus. And Alamo is offering a free lift ticket for a day at ski destinations in the West to customers who reserve and **rent** a four-wheel-drive **vehicle** for a day in selected cities in Colorado, Wyoming, Idaho, Nevada, Utah and New Mexico, Dec. 1 to April 30. Rates start at $39 a day.

SNOW SPIN: Beware of rosy snow reports that may not match harsh conditions on the slopes when you arrive, warns Snow Country's November Travel Watch. A natural inclination to accentuate the positive on the part of the ski areas that measure and report their own conditions to tracking services, delays in relaying the conditions on the part of the media and quicksilver weather changes likely on mountain tops are cited as snow distortion factors. Snow Country's advice: Ignore the high end of the report and concentrate on the low; if it's less than 24 inches, expect

bare patches. And ring up a local (an employee at the ski area or at a nearby chamber of commerce) to see what the weather is like just before you go.

Items for this column are drawn from wire reports, mail, personal observation and comments from readers. To pass on a suggestion, call travel editor Janet Wilson at 445-3668, or write to Travel, Austin American-Statesman, P.O. Box 670, Austin 78767.
